

Fish Salvage Program at the SWP and CVP Facilities

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The Fish Salvage Program has been evolving rapidly in recent years to meet today's delta monitoring requirements. This update compares 1996 with previous years and provides highlights of 1996 SWP and CVP fish salvage. An Interagency Technical Report is planned for later in the year. The original SWP and CVP fish salvage historical graphs can be found in the Winter 1996 *Newsletter*, and these historical graphs will be updated every year in the Status and Trends issue of the *Newsletter*.

SWP and CVP fish salvage levels were much lower in 1996 than in 1995. SWP fish salvage was reduced by 35%, and CVP salvage was 49% lower. The primary reason for the 1996 reduction was the absence of large numbers of splittail seen in 1995. The minnow family, *Cyprinidae*, usually accounts for 1-2% of total fish salvage, but made up about 46% of total salvage in 1995.

Striped bass, which historically account for 70% or more of total fish salvage, has been greatly reduced in recent years. Striped bass made up 13% of total salvage in 1995 and 14% of total salvage in 1996. Striped bass salvage levels in 1993 (52%) and 1994 (44%) were lower than the historical average, but still much higher than in 1995 and 1996.

Chinook salmon, delta smelt, and longfin smelt salvage levels haven't shown this dramatic drop. These special-status fish species historically account for up to 2% of

the total fish salvage, and the range (0.2-1.5% of total salvage) since 1993 is consistent with historical trends.

Figures 1 to 3 illustrate monthly SWP/CVP export levels, monthly total fish salvage per acre-foot (a measure of fish abundance), and monthly total fish salvage levels for 1996. Chinook salmon, striped bass, American shad, splittail, delta smelt, and longfin smelt monthly fish salvage levels and monthly mean length are shown in Figures 4 to 15.

SWP and CVP export levels were fairly consistent for most of 1996, except for February-May. The CVP was shut down for repairs on March 5-13, resulting in a low monthly export level, although abundance levels (fish per acre-foot) do not show much difference due to the export reduction. Monthly total fish salvage levels were similar to historical levels.

Striped bass monthly salvage levels were similar to historical levels except for an increase at the SWP during October and November. Mean size of striped bass salvaged in October and November was similar to the other months in the latter part of 1996. Splittail were more prevalent in May and June due to increased young-of-the-year salvage, and their salvage levels were more similar to historical levels than were 1995 levels. Delta smelt salvage peaked in May, with the influx of young-of-the-year making up most of the delta smelt salvage.

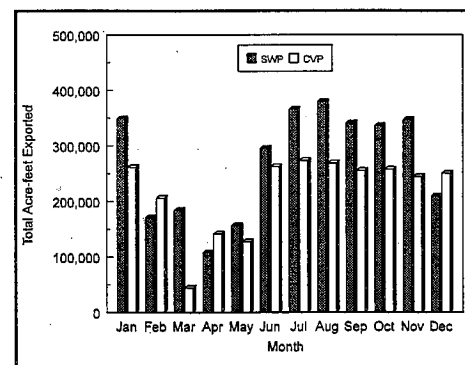


Figure 1
MONTHLY EXPORT LEVELS

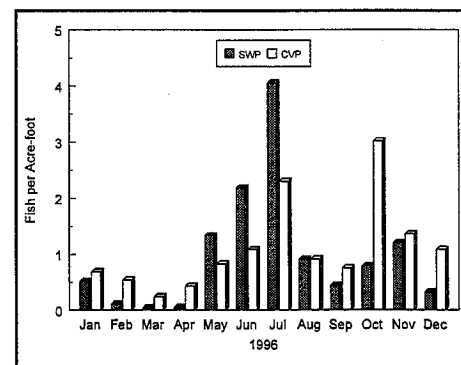


Figure 2
MONTHLY FISH SALVAGE PER ACRE-FOOT

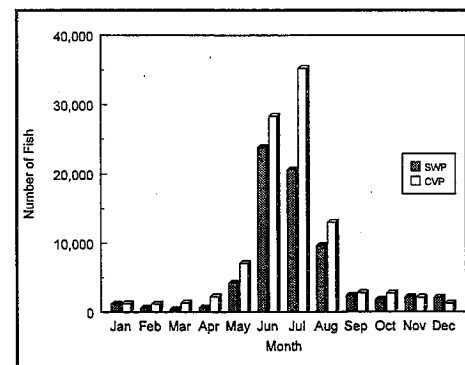


Figure 3
MONTHLY TOTAL FISH SALVAGE LEVELS

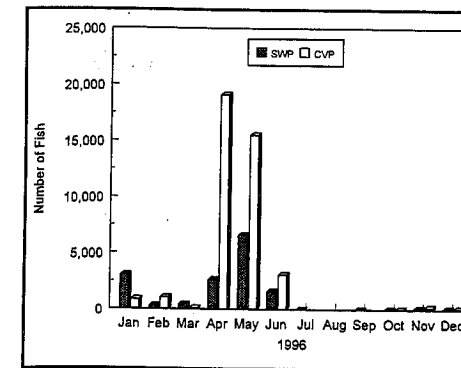


Figure 4
MONTHLY CHINOOK SALMON SALVAGE

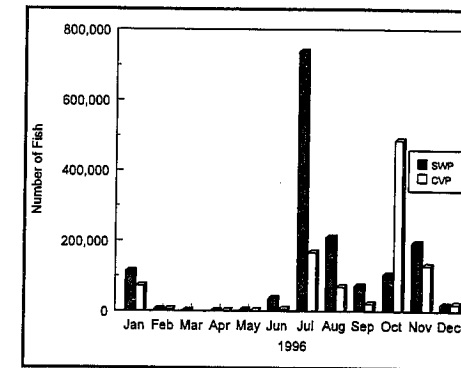


Figure 8
MONTHLY AMERICAN SHAD SALVAGE

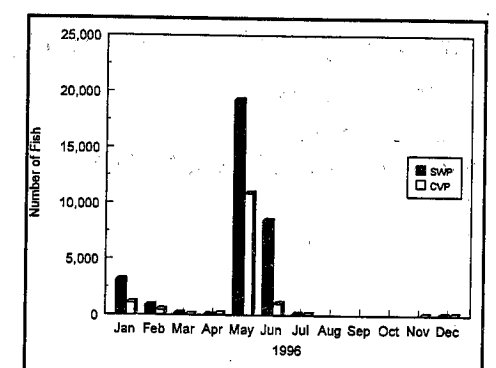


Figure 12
MONTHLY DELTA SMELT SALVAGE

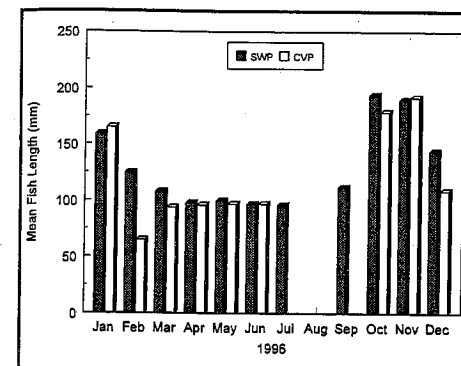


Figure 5
MONTHLY MEAN LENGTH OF
CHINOOK SALMON SALVAGED

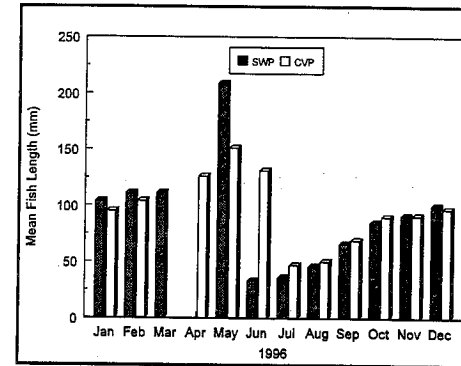


Figure 9
MONTHLY MEAN LENGTH OF
AMERICAN SHAD SALVAGED

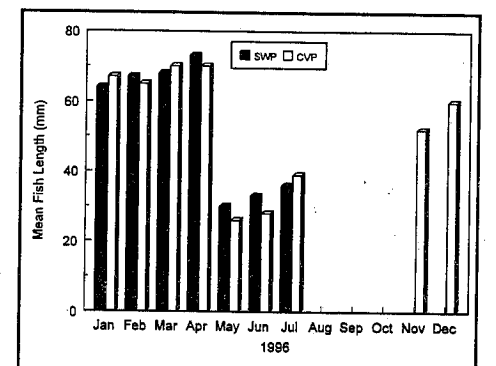


Figure 13
MONTHLY MEAN LENGTH OF
DELTA SMELT SALVAGED

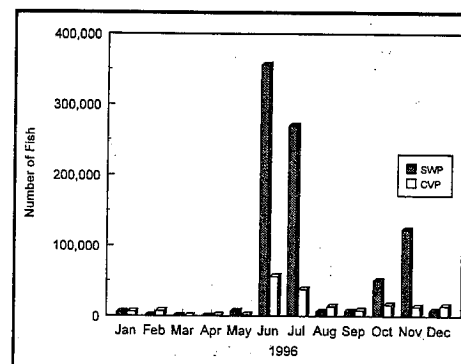


Figure 6
MONTHLY STRIPED BASS SALVAGE

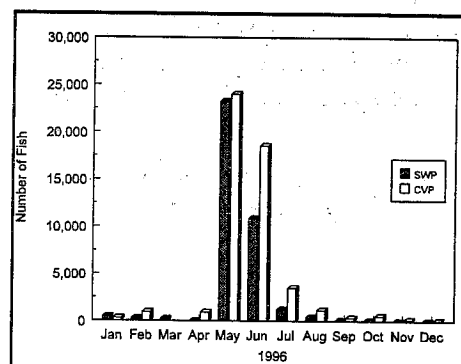


Figure 10
MONTHLY SPLITTAIL SALVAGE

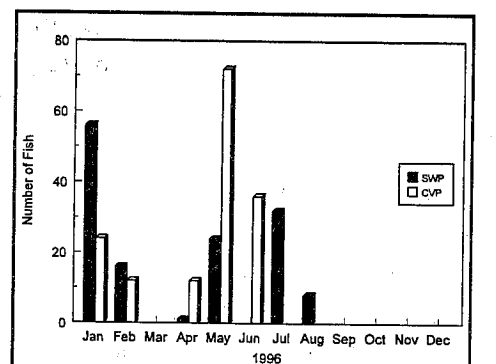


Figure 14
MONTHLY LONGFIN SMELT SALVAGE

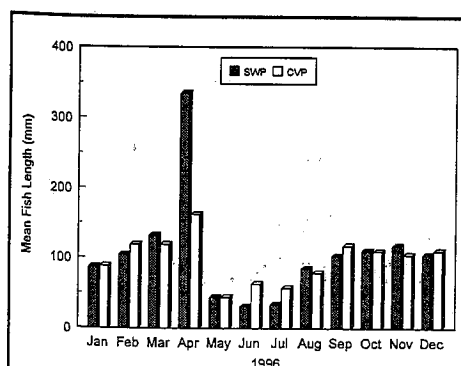


Figure 7
MONTHLY MEAN LENGTH OF
STRIPED BASS SALVAGED

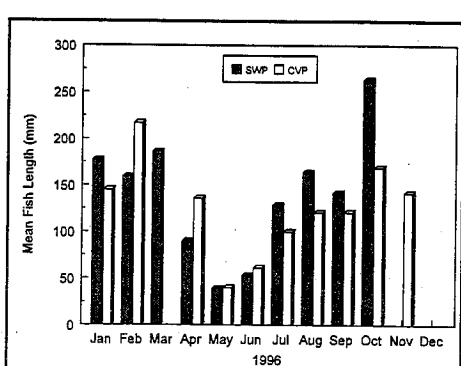


Figure 11
MONTHLY MEAN LENGTH OF
SPLITTAIL SALVAGED

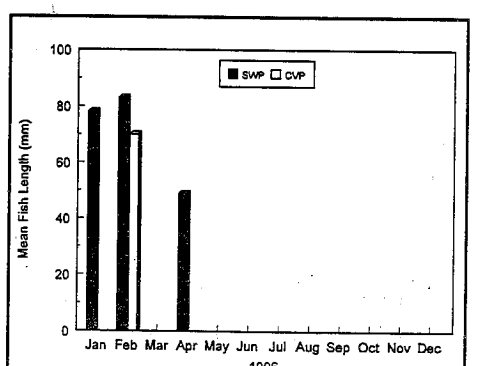


Figure 15
MONTHLY MEAN LENGTH OF
LONGFIN SMELT SALVAGED